REMARKS

Claims 1-34 are pending in the present application. By this Response, claims 1, 15, 16, 23, 26 and 29 are amended. Claims 12-14 are canceled. Claims 1 is amended to recite "an attenuation surface affixed to the barcode scanner, wherein the attenuation surface is located such that at least one end of the scan path of the barcode scanner is controlled by the attenuation surface to form a controlled end of scan, and wherein the controlled end of scan is used to determine a location of the attenuation surface with respect to a target associated with at least one storage cell within a storage library." This feature is supported at least on page 12, lines 1-30 of the current specification.

Claim 15 is amended to be consistent with amended claim 1. Claim 16 is also amended to provide proper antecedent basis. Claims 23 and 29 are amended to recite "moving a robot, having a barcode scan engine with a scan path having a scan path width controlled by an attenuation surface, in a direction substantially parallel to the scan path." Claim 26 is amended to recite "moving the robot in a direction substantially perpendicular to the scan path." These features are supported at least on page 12, line 20 to page 13, line 17 of the current specification. No new matter is added as a result of the above amendments. Reconsideration of the amendments to claims and the following Remarks is respectfully requested.

Also, Applicants have submitted a formal set of drawings labeled Figures 1-9 as suggested by the Examiner.

I.   Objection to Claims, Claims 23, 26, and 29

The Office Action objects to claims 23, 26, and 29 because of the following informalities:

> Re claims 23, 26 and 29, Examiner knows what Applicants mean by "translating a/the robot...." The phrase should be rephrased/reworded, since a/the robot is dictated by the information decoded from the barcode. Robot is not translated in a direction as recited in these claims. Appropriate correction is required.

By this Response, claims 23 and 29 are amended to recite "moving a robot, having a barcode scan engine with a scan path having a scan path width controlled by an

attenuation surface, in a direction substantially parallel to the scan path." Claim 26 is amended to recite "moving the robot in a direction substantially perpendicular to the scan path." Thus, the phrase "translating a/the robot..." is rephrased to "moving a/the robot" to recite the actual movement of the robot. These features are supported at least on page 12, line 20 to page 13, line 17 of the current specification. Accordingly, Applicants respectfully request the withdrawal of the objection to claims 23, 26 and 29.

II.   35 U.S.C. § 112, Second Paragraph, Claims 1-10, and 15

The Office Action rejects claims 1-10 and 15 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter, which applicants regard as the invention. This rejection is respectfully traversed.

> As to claim 1, the Office Action states:
>   Re claim 1, line 3: "an attenuation surface affixed to the barcode scanner," would be incomprehensible to implement in that the attenuation surface reflect lights from a scanner illumination source (see claim 4).
>   Clam 15 is rejected on the same ground.

Office Action dated April 19, 2004, page 3.

This rejection is improper since the rejection amounts to a question about how the invention operates rather than a showing of any indefiniteness of the claims. If the Examiner wishes to know how the invention works, the Examiner is referred to the specification as clearly describing exemplary embodiments of the present invention. Specifically, with regard to the attenuation surface, the Examiner is referred to page 11, line 26 to page 14, line 2. As far as any indefiniteness, the Office Action fails to show where any feature recited in the claims is recited indefinitely. Applicants have clearly set forth what Applicants believe to be the invention. If the Examiner wishes to know more about how that invention operates, the Examiner should refer to the specification.

For the Examiner's clarification, as shown in **Figure 6** of the current specification, an attenuation surface with an aperture opening **610** is affixed to barcode scan engine **604**. In an exemplary embodiment, the attenuation surface, as described on

page 13, line 21 to page 14, line 1 of the current specification, is beveled to ensure that specular scattering does not result in light being reflected back into the scanner **604** from the attenuation surface. However, it is not "incomprehensible" to implement the attenuation surface, even if the attenuation surface reflects light from a scanner illumination source in a non-detrimental manner, as recited in claim 4. Since the attenuation surface may reflect light to directions other than into the scanner, as long as the light reflected by the attenuation surface does not reflect back into the scanner, or some other correction is performed for light that is reflected back into the scanner, it is "comprehensible" to implement the attenuation surface.

Therefore, Applicants respectfully submit that claims 1-10 and 15 are not indefinite for pointing out and distinctly claim the subject matter which Applicants regard as the invention and are now in condition for allowance. Accordingly, Applicants respectfully request the withdrawal of rejection to claims 1-10 and 15 under 35 U.S.C. § 112, second paragraph.

III.   35 U.S.C. § 102(b), Alleged Anticipation, Claims 12-14, 16, 20-23, 26, and 29

The Office Action rejects claims 12-14, 16, 20-23, 26 and 29 under 35 U.S.C. § 102(b) as being anticipated by Rockwell et al. (U.S. Patent No. 6,138,909). This rejection is respectfully traversed.

> As to claims 12, 14, 16, 20, 22, 23, 26 and 29, the Office Action states:
> Re claims 12, 14, 16, 20, 22, 23, 26, and 29, Rockwell teaches a robot (see figure 1; col. 1, lines 35+) comprising a gripper 22, a barcode scanner 26 providing a scan path affixed to the robot (col. 2, lines 35+), wherein the positional parameters are retrieved from the barcode (col. 3, lines 35+).

Office Action dated April 19, 2004, page 3.

While claims 12-14 are canceled, amended independent 1, which includes features of canceled claim 12 and recites similar subject matter as claim 16, reads as follows:

> 1.   A robot, the robot comprising:
> a barcode scanner with a scan path, wherein the barcode scanner is affixed to the robot;

an attenuation surface affixed to the barcode scanner, wherein the attenuation surface is located such that at least one end of the scan path of the barcode scanner is controlled by the attenuation surface to form a controlled end of scan, wherein the controlled end of scan is used to determine a location of the attenuation surface with respect to a target associated with at least one storage cell within a storage library. (emphasis added)

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. *In re bond*, 910 F .2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed Cir. 1990). All limitations of the claimed invention must be considered when determining patentability. *In re Lowry*, 32 F.3d 1579, 1582, 21 U.S.P.Q.2d 1031, 1034 (Fed Cir. 1994). Anticipation focuses on whether a claim reads on the product or process a prior art reference discloses, not on what the reference broadly teaches. Kalman v. Kimberly-Clark Corp., 713 F .2d 760, 218 U.S.P.Q. 781 (Fed. Cir. 1983). Applicants respectfully submit that Rockwell does not teach every element of the claimed invention arranged as they are in claim 1. Specifically, Rockwell does not teach an attenuation surface affixed to the barcode scanner, wherein the attenuation surface is located such that at least one end of the scan path of the barcode scanner is controlled by the attenuation surface to form a controlled end of scan, and wherein the controlled end of scan is used to determine a location of the attenuation surface with respect to a target associated with at least one storage cell within a storage library.

Rockwell teaches a media handling system that includes a data cartridge processor having an opening to receive a data cartridge. The data cartridge processor functions to read data from or record data to the data cartridge. The system also includes a gripper for inserting the data cartridge into the opening and an actuator to effect movement of the gripper. A code symbol is affixed to the data cartridge processor and a code reader is associated with the gripper to read code symbol for locating the opening of the data cartridge processor (Abstract).

The Office Action alleges that Rockwell teaches the features of claim 12, which is now incorporated into amended claim 1, in **Figure 1** as shown below:
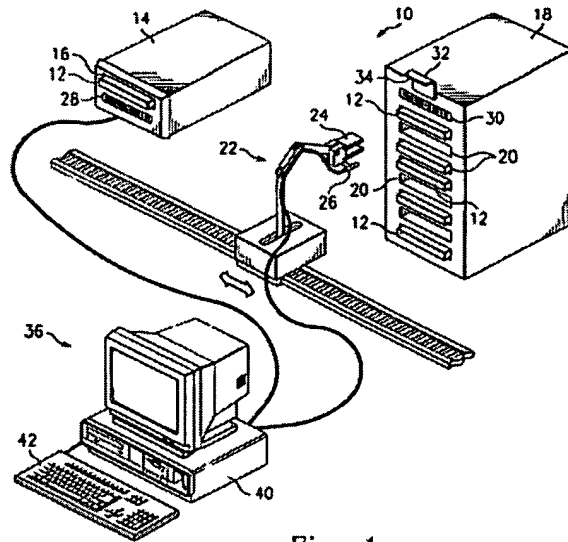
Fig. 1

In **Figure 1**, Rockwell teaches a gripper **22** to which fingers **24** and code reader **26** are affixed. However, Rockwell does not teach an attenuation surface that is affixed to the barcode scanner. The code reader **26** in **Figure 1** does not have any attenuation surface affixed to it. There is nothing affixed to code reader **26** of Rockwell. In addition, Rockwell does not teach an attenuation surface that is located such that at least one end of the scan path of the barcode scanner is controlled. While the Examiner may have interpreted the path between data cartridge processor **14** and storage rack **18** as a scan path, Rockwell still does not teach an attenuation surface that is located such that at least one end of the scan path of the barcode scanner is controlled by the barcode scanner.

To the contrary, at column 2, lines 50-67, Rockwell teaches a system controller **36** having an output for controlling an actuator **38**. The system controller **36** comprises computers, workstation, mini-computer, mainframe or other computing device **40**. Thus, the nature of the mechanism that controls the scan path in Rockwell is different from the presently claimed invention, in that Rockwell uses a system controller **36**, which is a computing device, to control the movement of gripper **22**. In the presently claimed invention, the attenuation surface forms a controlled end of scan that cuts off at least one end of the scan path in order to control it. There is simply no attenuation surface in Rockwell that controls the at least one end of the scan path. In other words, Rockwell uses a computer to control the movement of the gripper (which the Office Action equates

with a scan path) and the presently claimed invention uses a physical blockage, i.e., the attenuation surface, to cut off or control an end of a scan path.

The Office Action also alleges that Rockwell teaches the features of claim 12, which is now incorporated into amended claim 1, at column 1, lines 26+, column 2, lines 35+, and column 3, lines 35+, which reads as follows:

> Referring to **FIG. 3**, the media handling system **10** determines offset distances **44** and **45** between the code reader **26** and the fingers **24** with respect to where the code reader **26** is reading. The distances **44** and **45** are determined using one of the code symbols **28** and **30** and the touch stop **34**. For example, the code symbol **28** is affixed to the data cartridge processor **14** so that an edge **46** of the code symbol **28** is located known distances **48** and **49** from edges **50** and **51**, respectively, of the touch stop **34**. The distances **48** and **49** are stored in the memory of the computing device **40** of the system controller **36** through the operator keyboard **42**. Using the fingers **24**, the gripper **22** locates the edges **50** and **51** of the touch stop **34** and stores the location of edges **50** and **51** in the memory of the computing device **40**. Additionally, the code reader **26** scans or reads the code symbol **28** and stores the location of the edge **46** of the code symbol **28** in the memory of the computing device **40**. The system controller **36** calculates the distance **44** and **45** using the measured distances between the edge **46** and the edges **50** and **51** as determined using the code reader **26** and the fingers **24** and the known distances **48** and **49** stored in the memory of the computing device **40**. Thus, the media handling system **10** accurately position the fingers **24** of the gripper **22** using the code reader.
>
> Once the distances **44** and **45** between the code reader **26** and the fingers **24** are determined, the system controller **36** accurately locates each data cartridge processor **14** and storage rack **18** in the media handling system **10** using the code reader **26**. For example, the code system **28** is affixed to the data cartridge processor **14** so that the edge **46** of the code system **28** is located a predetermined distance from the opening **16**. This predetermined distance is stored in the memory of the computing device **40** of the system controller **24** through the operator keyboard **42**. By locating the edge **46** of the code symbol **28**, distances **44** and **45** are used to accurately align the fingers **24** with the opening **16** of the data cartridge processor **14**. Additionally, each compartment **20** of the storage rack **18** will be accurately located in the similar manner using code symbol **30**.

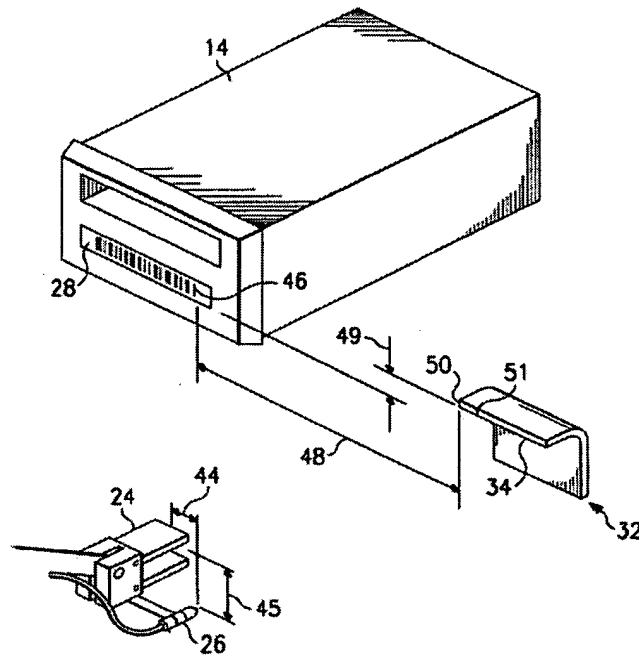**Figure 3** of Rockwell is shown below:

Fig. 3

Rockwell does not teach <u>a controlled end of scan that is used to determine a</u> <u>location of the attenuation surface with respect to a target associated with at least one</u> <u>storage cells within a storage library</u>. Since Rockwell does not teach an attenuation surface, Rockwell does not and would not teach determining the location of the attenuation surface with respect to a target. While Rockwell teaches measuring distances relative to edges **50** and **51**, these edges do not serve the function of an attenuation surface such as the attenuation surface recited in amended claim 1. To the contrary, in the above section, Rockwell teaches determining the location of edges **50** and **51** of touch stop **34** with respect to edge **46** of code symbol **28**, not a location of an attenuation surface with respect to a target. The touch stop **34** is not the same as an attenuation surface, in that it is attached to storage rack **18** instead of a barcode scanner. In addition, the touch stop does not cut off at least one end of the scan path. The touch stop is only used as a reference in Rockwell to measure the distances. The touch stop does not form a controlled end of scan for the gripper **22**. Therefore, Rockwell does not teach the same feature as recited in amended claim 1.

As to amended independent claim 16, it now recites:

16. A library storage system, the system comprising:

a plurality of storage cells, wherein at least some of the plurality of storage cells include a target;

a robot for moving items to and from the storage cells, wherein the robot includes <u>a barcode scanner with a scan path, an attenuation surface, wherein the attenuation surface is located such that at least one end of the scan path is controlled by the attenuation surface to form a controlled end of scan, wherein the controlled end of scan is used to determine a location of the attenuation surface with respect to the target.</u> (emphasis added)

Rockwell does not teach an attenuation surface that is included in a robot, wherein the attenuation surface is located such that at least one end of the scan path is controlled by the attenuation surface to form a controlled end of scan, wherein the controlled end of scan is used to determine a location of the attenuation surface with respect to the target. As discussed in previous arguments for amended claim 1, Rockwell only teaches a code reader and fingers that are affixed to the gripper. Rockwell does not teach anything about an attenuation surface included in a robot, let alone an attenuation surface that is located such that at least one end of a scan path is controlled by the attenuation surface. In addition, as set forth in the arguments previous presented in claim 1, Rockwell does not teach anything about using a controlled end of scan to determine a location of an attenuation surface with respect to a target. Therefore, Rockwell does not teach the features of claim 16.

As to amended independent claim 23, which is representative of independent claim 29 with regard to similarly recited subject matter, reads as follows:

23.   A method for determining the position of a robot relative to a target, the method comprising:

<u>moving a robot, having a barcode scan engine with a scan path having a scan path width controlled by an attenuation surface,</u> in a direction substantially parallel to the scan path;

determining a first parallel position at which the target is first readable by the barcode scan engine; and

<u>determining a second parallel position at which the target first becomes unreadable by the barcode scan engine.</u> (emphasis added)

Rockwell does not teach a robot having a barcode scan engine with a scan path having a scan path width controlled by an attenuation surface. As described above, Rockwell does not teach an attenuation surface, let alone a scan path having a scan path width that is controlled by such an attenuation surface. In addition, Rockwell does not

teach determining a second parallel position at which the target first becomes unreadable by the barcode scan engine.

The Office Action alleges that these features are taught at column 3, lines 35 to 57. In this section, Rockwell teaches measuring distance **48** by locating edge **46** of code symbol **28** and edge **50** of touch stop **34**. Distance **48** between these two edges is parallel to the movement of the gripper **22**. Edge **46** is only one end of code symbol **28**. Therefore, Rockwell only teaches determining a first parallel location of code symbol **28**. Rockwell does not determine a second parallel location of code symbol **28**. Therefore, Rockwell fails to teach the feature of determining a second parallel position at which the target first becomes unreadable by the barcode scan engine, as recited in claims 23 and 29.

In view of the above, Applicants respectfully submit that Rockwell does not teach or suggest all of the features of claims 1, 15, 16, 23 and 29. At least by virtue of their dependency on claims 1, 16 and 23, respectively, Rockwell does not teach or suggest the features of dependent claims 2-11, 20-22 and 26. Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 1-11, 16, 20-23, 26 and 29 under 35 U.S.C. § 102(b).

IV. **35 U.S.C. § 103(a), Alleged Obviousness, Claims 17-19, 24, 25, 27, 28 and 30-34**

The Office Action rejects claims 17-19, 24, 25, 27, 28 and 30-34 under 35 U.S.C. § 103(a) as being unpatentable over Rockwell et al. (U.S. Patent No. 6,138,909). This rejection is respectfully traversed.

As to claims 17-19, the Office Action states:

> Re. claims 17-19, the material used in manufacturing the storage rack **18** can be used to make the rack comprising sharp edges – In fact, border area of each tray compartment **20** create sharp edges. Although Rockwell does not explicitly suggest that the surface is beveled, such feature is a design consideration. One ordinary skill in the art would choose to design the surface however he/she wants as long as the barcode can be applied and functions as intended.

As described in previous arguments for claims 1, 16, 23 and 29, Rockwell does not teach an attenuation surface that is affixed to a barcode scanner. Therefore, Rockwell cannot teach or suggest at least one of the edges of the attenuation surface is beveled (claim 17), the attenuation surface being constructed from material formable into sharp edges (claim 18), or the attenuation surface being configured to reflect a scanner illumination source in a non-detrimental manner (claim 19).

The Office Action alleges that the material used to manufacture the storage rack may be used to make a rack that comprises sharp edges. However, the storage rack **18** of Rockwell has nothing to do with an attenuation surface that is affixed to a barcode scanner. At column 2, lines 35-45, the storage rack **18** of Rockwell is merely a plurality of storage trays that holds or stores a number of data cartridges. The storage rack **18** is not an attenuation surface, which is affixed to a barcode scanner. Since there is no teaching or suggestion of an attenuation surface, a person of ordinary skill in the art would not be led to modify the storage rack of Rockwell to construct an attenuation surface from material formable into sharp edges, as recited in claim 18.

The Office Action also states that although Rockwell does not explicitly teach that the surface is beveled, such a feature is a design consideration and that one of ordinary skill in the art would choose to design the surface however he/she wants as long as the barcode can be applied and functions as intended. Applicants respectfully disagree.

There is no teaching or suggestion of an attenuation surface in Rockwell. In addition, as described on page 13, lines 18-30 of the current specification, the attenuation surface is beveled to ensure that specular reflections are not sent back into the scanner. The beveled attenuation surface is not merely a design choice. Therefore, a person of ordinary skill in the art would not choose to add an attenuation surface to the system of Rockwell and design the attenuation surface to be beveled, unless having first had benefit of Applicants' disclosure.

Furthermore, the Office Action states:

> Re. claims 24, 25, 27, 28, and 30-34, as shown in figure 3, the robot retrieves/deposits a data cartridge relying on positioning the device according to offset value 44, and 45 from the (col. 3, lines 35+). Location of the left edge 46 is stored along with the barcode information (col. 3, lines 49+). Although not explicitly suggested, it is obvious to one of ordinary skill in the art to store

location of right edge, or calculate center/mid point using locations of right and left edges.

While Rockwell teaches determining the location of one edge of a code symbol, Rockwell does not teach or suggest determining the center of the target in the parallel direction (claims 24, 30), assigning a position halfway between first and second parallel positions as the center position of the target in the parallel direction (claims 25, 31), determining the center of the target in the perpendicular direction from the first and second perpendicular positions (claim 27, 33), or assigning the midpoint between the first and second perpendicular positions as the center of the target in the perpendicular direction (claims 28, 34).

As described in previous arguments presented for claims 23 and 29, Rockwell does not teach or suggest determining the location of a second parallel location of the target. It would not have been obvious to one of ordinary skill in the art to determine the center of the target by assigning a position halfway between first and second positions, because without first determining the location of the second edge of the target, the center or midpoint of the target may not be determined.

In addition, a person of ordinary skill in the art would not have been motivated by Rockwell to determine the location of the second edge, since Rockwell is only concerned with using one edge of the code symbol to measure the distance between the code symbol and the touch stop. Rockwell is not concerned with determining the center or midpoint of the code symbol. Therefore, a person of ordinary skill in the art would not be motivated to determine the location of the second edge of code symbol in order to determine the center of the target, without the disclosure of the Applicants.
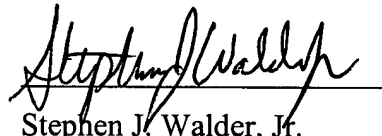
Accordingly, Applicants respectfully request the withdrawal of rejection of claims 17-19, 24, 25, 27, 28 and 30-34 under 35 U.S.C. § 103(a).

V.   **Conclusion**

It is respectfully urged that the subject application is patentable over Rockwell et al. (U.S. Patent No. 6,138,909) and is now in condition for allowance. The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

Respectfully submitted,

DATE: _July 19, 2004_

Stephen J. Walder, Jr.
Reg. No. 41,534
Yee & Associates, P.C.
P.O. Box 802333
Dallas, TX 75380
(972) 367-2001
Attorney for Applicants

SJW/im